SITE ASSESSMENT REPORT
DUTCH BOY SITE
CHICAGO, COOK COUNTY, ILLINOIS

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 5 Emergency Response Branch
77 West Jackson Boulevard
Chicago, IL 60604

TDD No.:	S05-0108-029
Date Prepared:	06 Dec 01
Contract No.:	68-W-00-129
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1.0 INTRODUCTION

The Tetra Tech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) was tasked to perform site assessment activities for the Dutch Boy site in Chicago, Cook County, Illinois, by the U.S. Environmental Protection Agency (U.S. EPA) under Technical Direction Document (TDD) No. S05-0108-029. Specifically, START was tasked to perform a site assessment in order to identify the extent of lead contamination at the Dutch Boy site. The site assessment activities included identification of previous sampling locations using a global positioning system (GPS), procurement of a direct-push sampler, collection of soil samples, documentation of site conditions with written logbook notes and a still camera, procurement of an analytical laboratory, validation of sample analytical data, and preparation of this site assessment report.

The site assessment was performed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as documented in Title 40 of the *Code of Federal Regulations* (CFR) Section 300.415(b)(2) to evaluate site conditions and possible threats to human health, public welfare, and the environment. This report presents site background information, site assessment activities, sample analytical results, potential threats associated with the site, and a summary of the site assessment. Appendix A contains a photographic log of site activities, and Appendix B contains the validated analytical data package for the samples collected by START.

2.0 SITE BACKGROUND

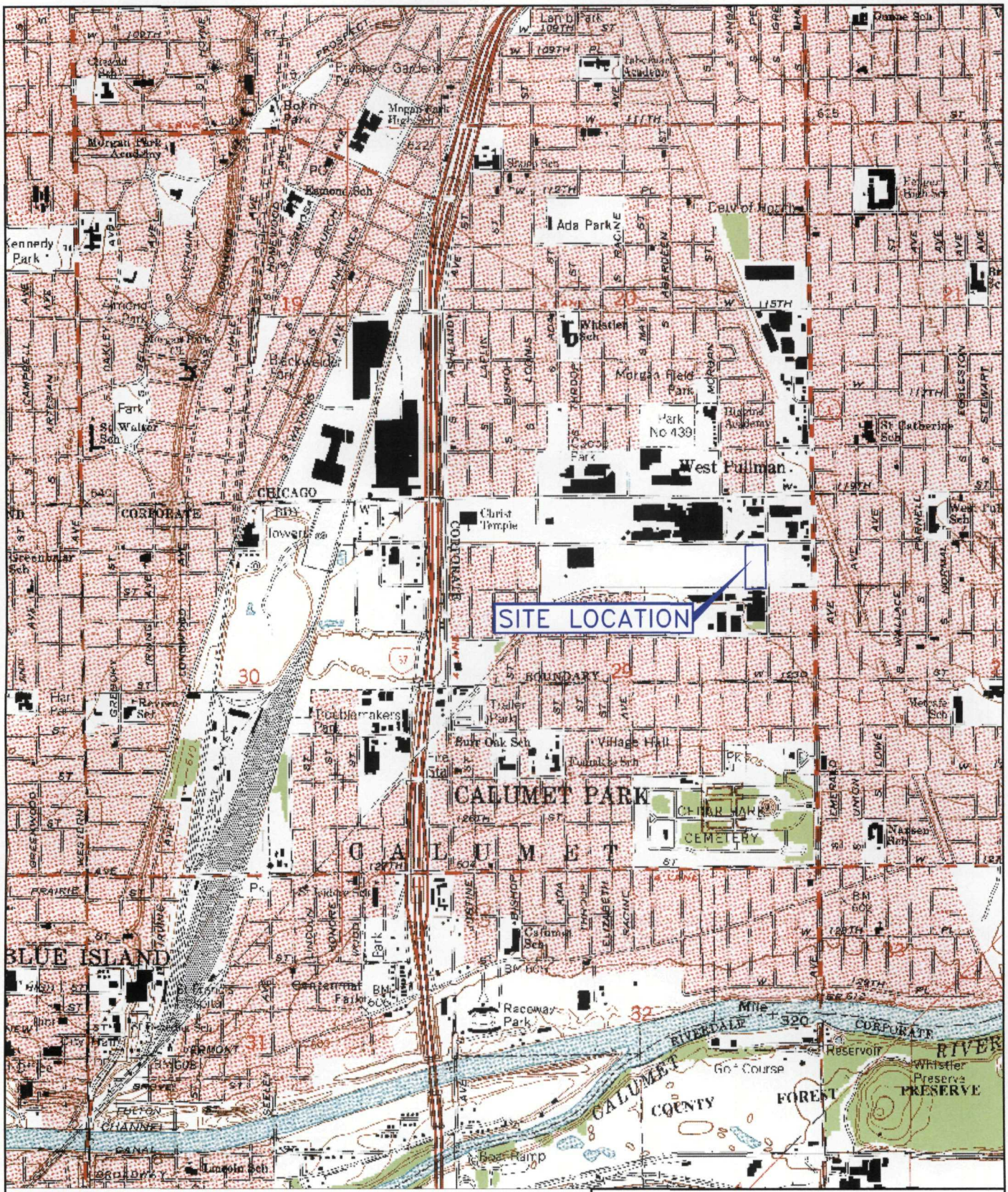
This section describes the Dutch Boy site, discusses the site history, and summarizes previous environmental investigations at the site.

2.1 SITE DESCRIPTION

The Dutch Boy site is located from 12000 to 12054 South Peoria Street and from 901 to 935 West 120th Street in Chicago, Cook County, Illinois. The site lies in the northeast quarter of Section 29, Township 37 North, Range 14 East (see Figure 1). The site is bounded on the north by West 120th Street, on the east by South Peoria Street, on the south by Illinois Central Gulf Railroad tracks, and on the west by an empty lot.

Dutch Boy site
Chicago, Cook County, Illinois

The site covers 5.2 acres in a primarily industrial area. No standing buildings remain at the site, and many of the concrete slab foundations that previously covered much of the site have been removed. Currently, approximately 20 percent of the site is concrete-covered, and the remaining 80 percent is soil-covered.



SOURCE: MODIFIED FROM USGS, 7.5-MINUTE SERIES TOPOGRAPHIC MAP OF BLUE ISLAND, ILLINOIS, QUADRANGLE, 1993.

DUTCH BOY SITE
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FIGURE 1
SITE LOCATION MAP

Tetra Tech EM Inc.

2.2 SITE HISTORY

According to a 1911 Sanborn Fire Insurance (Sanborn) Map, the eastern part of the Dutch Boy site property was occupied by the Carter White Lead Company. An underground cistern was present north of a reservoir. An oil house designated as Building 11 and an oil refinery designated as Building 12 were located at the site. Railroad spurs crossed the property. A corroding house, wash house, engine room, mill house, blow house, and warehouse were present in the central portion of the property. The eastern portion of the property was unpaved and undeveloped except for a small office in the southeastern portion of the property. Small buildings were present in the southwestern portion of the property and were designated as a shed, a bath house, and a carpenter shop.

A 1939 Sanborn Map shows the Carter White Lead Company's name as having changed to National Lead (NL), Carter Branch. The oil house and refinery are shown, but the oil house is relabeled as Building 10. The corroding house extended to the eastern side of the property. The mill house and wash house had been expanded, and a machine shop covered the former reservoir area. The engine room had been enlarged and extended over the former cistern. Some additional buildings were present in the southwestern portion of the property. The railroad spurs remained in place.

In a 1950 Sanborn Map, Building 10 is not shown. Seven linseed oil tanks are shown at the western boundary of the site. New structures had been added to the southwestern portion of the property. A 1975 Sanborn Map shows several aboveground storage tanks (AST) adjacent to and west of Building 11. A 1987 Sanborn Map shows the site property as being vacant, and a 1993 Sanborn Map shows the property as being vacant except for concrete ruins along South Peoria Street.

The site is currently vacant except for the remaining concrete slab foundations and materials and machinery associated with the site remedial action.

2.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Previous environmental investigations of the Dutch Boy site have been conducted by the following parties and are summarized below: the Illinois Environmental Protection Agency (IEPA); Toxcon Engineering Company, Inc. (Toxcon); Ecology & Environment, Inc. (E&E); Simon Hydro-Search, Inc.

(Simon); Harza Consulting Engineers and Scientists (Harza); U.S. EPA; Science Applications International Corporation (SAIC); ENVIRON Corporation (Environ); Environmental Strategies Corporation (ESC); Tetra Tech, and Earth Tech.

IEPA

An IEPA removal action was conducted at the site in three phases between Jun 86 and 1987. During a Phase I removal action in Jun 86, IEPA removed and disposed of surficial solids either suspected or known to contain lead and asbestos. During a Phase II assessment in Nov 86, IEPA sampled, analyzed, and disposed of the liquids, solids, and sludges contained in all the site's ASTs and underground storage tanks (UST). IEPA also removed all existing process and production equipment, baghouses, mixing tanks, screw conveyors, hoppers, masonry rubble, asbestos, and debris. Additionally, IEPA demolished all free-standing building walls.

During a Phase III assessment in 1987, IEPA assessed the structural integrity of the site USTs and concluded that they were structurally sound and did not leak. Soil samples were collected and analyzed for lead. Analytical results indicated that 130 cubic yards (yd^3) of soil on and adjacent to the site contained extraction procedure (EP) toxicity lead concentrations greater than 5 milligrams per liter (mg/L) and that 140 yd^3 of soil contained more than one percent lead.

Toxcon

In Jun 87, Toxcon collected 34 soil samples from locations on site and in the parkway across the street from the site on behalf of NL. Samples collected from the northeastern and western portions of the site contained total lead concentrations of 11,400 and 50,000 milligrams per kilogram (mg/kg), respectively. A sample collected from the western portion of the site had an EP toxicity lead concentration of 41 mg/L. Toxcon conducted additional field sampling in Jun 88 and concluded that one on-site area and two off-site areas contained EP toxicity lead concentrations greater than 5 mg/L.

E&E

In 1991, E&E conducted an investigation of the site on behalf of U.S. EPA. E&E observed small piles of household and construction refuse scattered over the site. Because potentially hazardous substances and lead-containing soil were still present, E&E concluded that the potential release of hazardous substances to air posed a threat to human health. E&E recommended that the site be secured to prevent access by the public and further investigated to determine whether the site posed a potential threat to the community. On 10 Aug 93, U.S. EPA, IEPA, and E&E conducted a site assessment. No soil piles or exposed soils were identified, and no soil samples were collected.

Simon

On 25 and 26 Aug 93, Simon collected 11 soil samples from seven on-site locations on behalf of NL. Samples collected on the western side of the site along the loading dock and railroad spur contained total lead concentrations as high as 45,700 mg/kg and toxicity characteristic leaching procedure (TCLP) lead concentrations as high as 694 mg/L. Samples collected from the road outside the northeastern corner of the site contained total lead concentrations as high as 19,200 mg/kg and a maximum TCLP lead concentration of 98.4 mg/L.

Harza

On 10 May 94, Harza conducted a site investigation on behalf of the City of Chicago. Harza collected 13 wipe samples and 13 scrape samples from the former mill building on site. Seven of the wipe samples and eight of the scrape samples met the Illinois Department of Public Health definition of a lead-bearing substance. Six soil samples collected from depths of 6 and 15 feet below ground surface (bgs) were analyzed for TCLP lead; one additional soil sample was collected at a depth of 1 to 2.5 feet bgs and analyzed for TCLP lead. All the samples had TCLP lead concentrations at or below the 5.0-mg/L Resource Conservation and Recovery Act (RCRA) concentration that defines a hazardous waste.

U.S. EPA

On 08 Jun 95, U.S. EPA, E&E, and Harza conducted an additional site assessment. Six soil samples were collected and analyzed for lead. Total lead was detected in on-site soil at concentrations ranging from 1,540 to 31,700 mg/kg. A sample collected along the northernmost loading dock had a TCLP lead concentration of 351 mg/L.

SAIC

In Feb 96, U.S. EPA's contractor, SAIC, reviewed available reports on the site and assessed the potential for a release of lead from the site. SAIC calculated that approximately 166 tons of lead had been released to air from historical site manufacturing processes between 1906 and 1980. SAIC assumed that each of the manufacturing processes had a short stack, low exit velocity, and low temperature and estimated that most of the emissions would have settled out within several hundred feet of the site. In Mar 96, U.S. EPA prepared an interim final risk assessment for the site. U.S. EPA assumed that the site would be used for occupational purposes and that it would not be frequented by small children. Based on these assumptions, U.S. EPA calculated a risk-based cleanup goal of 1,400 mg/kg as the average concentration of lead in site soils. U.S. EPA concluded that any site locations with total lead concentrations higher than 1,400 mg/kg should be remediated.

Environ

In 1997, Environ conducted an extent of contamination (EOC) survey at the site on behalf of NL. The objective of the survey was to evaluate the vertical and horizontal extent of lead contamination in soil at the site and in its vicinity. Over 350 soil samples were collected from 151 locations and analyzed for lead. The on-site soil containing lead concentrations greater than the 1,400-mg/kg risk-based cleanup goal was found to be generally limited to the unpaved western portions of the site, including the railroad spurs leading to the loading dock. Lead concentrations in surface soil in the railroad spur area ranged from 5,000 to 10,000 mg/kg. Selected soil samples were analyzed for other chemicals to evaluate their potential impact on remedial technologies. Diesel-related petroleum hydrocarbons were identified in soil samples collected near the loading dock in the northwestern corner of the site. The petroleum hydrocarbon-impacted soil was found to be confined to the immediate vicinity of a UST.

In 1998, NL retained Environ to prepare a risk management plan for mitigation of risks to human health and the environment at the site. The four remedial alternatives developed to mitigate risks posed by the lead contamination included (1) on-site containment, (2) excavation of "principal threat waste" (defined by U.S. EPA as having a lead concentration of 40,000 mg/kg), (3) excavation of 2 to 4 feet of contaminated soil, and (4) excavation of all contaminated soil. The remedial action recommended by Environ was to excavate the top 2 to 4 feet of soil in the "principal threat" area, treat and dispose of the soil off site, backfill the excavated area, and place 5 feet of soil cover over unpaved areas.

ESC

In accordance with a 26 Mar 96 unilateral administrative order issued by U.S. EPA, NL implemented a remedial action to abate risks associated with lead-contaminated soil at the site. ESC performed the remedial action, which included excavation, treatment, and disposal of all soil in unpaved areas of the site and soil in the parkways containing total lead concentrations greater than U.S. EPA's risk-based cleanup goal of 1,400 mg/kg. The action also included removal of all site USTs. The remedial action activities were performed between 6 May and 21 Oct 99.

A total of 7,848 tons of lead-contaminated soil was excavated from the unpaved areas of the site and stockpiled. Of the total quantity of lead-contaminated soil, 7,236 tons was treated by stabilization and transported for disposal. Samples were collected from the treated soil pile and analyzed for TCLP lead. TCLP lead concentrations in the 14 samples from the treated soil pile did not exceed the RCRA regulatory level of 5.0 mg/L. Samples collected from the untreated soil piles did not contain TCLP lead in concentrations exceeding 5.0 mg/L; therefore, the 612 tons of untreated soil was disposed of as nonhazardous waste. A total of 51 confirmation soil samples were collected from the remediated areas and analyzed for total lead. Concentrations of total lead in the final confirmation soil samples did not exceed the risk-based cleanup goal of 1,400 milligrams mg/kg. Depths of excavation ranged from 2 to 4 feet bgs in the unpaved areas.

Nine USTs were removed and disposed of off site. Soil was excavated to a depth of 9 feet bgs in the UST area. A total of 234 yd^3 of concrete was removed from the UST area and disposed of off site. A total of 17 confirmation soil samples were collected from the UST excavation and analyzed for total lead. The confirmation soil samples contained total lead concentrations below the risk-based cleanup goal of

1,400 mg/kg except for one sample (UST-017); this sample contained a total lead concentration of 1,700 mg/kg and was collected 9 feet bgs.

A total of 8,180 yd^3 of backfill was placed and compacted at the site. About 0.6 acre of the site was seeded and mulched. In addition, 40 yd^3 of debris that potentially contained lead-impacted soil was treated and disposed of off site.

Tetra Tech

On behalf of the City of Chicago, Tetra Tech completed a preliminary site investigation on 13 Jul 99. This investigation was performed to determine whether additional soil should be remediated by NL during the ongoing remedial action. The preliminary site investigation included advancement of five continuous soil borings in the area remediated by ESC. Soil samples collected during the investigation were analyzed for volatile organic compounds, semivolatile organic compounds, total priority pollutant metals, and pH.

In Oct 00, Tetra Tech conducted an EOC study in the northeastern corner of the site. Tetra Tech conducted soil sampling in a 100- by 60-foot grid area. A total of 24 samples were collected from eight sampling locations. Samples were collected from 0 to 2 feet, 2 to 3 feet, and 3 to 4 feet bgs. Each sample was analyzed for total lead, and if its total lead concentration was greater than 400 mg/kg, the sample was analyzed for TCLP lead. Of the 24 samples analyzed, 5 samples had total lead concentrations greater than 400 mg/kg. Of those 5 samples, 3 samples had TCLP lead concentrations exceeding 5 mg/L. As a result of these findings, approximately 800 tons of soil was stabilized in situ and then removed and disposed of as special waste at Waste Management CID Landfill in Calumet City, Illinois.

Earth Tech

On behalf of the City of Chicago, Earth Tech conducted a Phase III removal action at the site from 11 Jul 00 until 13 Feb 01. The removal action involved three major tasks: (1) surface debris removal; (2) asbestos and water removal from basements; and (3) concrete removal, excavation and disposal of lead-contaminated soil, and backfilling. Under Task 1, Earth Tech removed two surface debris piles; 1,119

tons of concrete; 52 tons of railroad ties; and 41 tons of miscellaneous wastes consisting of construction debris and car ties.

Task 2 was divided into five subtasks: (1) dewatering, (2) an asbestos survey, (3) asbestos abatement, (4) AST removal, and (5) sludge removal and disposal. Earth Tech pumped 300,800 gallons of water from the tank basement, north corridor basement, and west basement for off-site treatment and disposal. An asbestos survey conducted on 18 Jul 00 revealed the presence of asbestos-containing material (ACM) on piping in the central and west pipe tunnels. A total of 579 linear feet of pipe insulation and 2.9 tons of surficial wastes containing ACM were removed and disposed of off site. Six ASTs were removed from the tank and west basements. The four tanks in the tank basement contained water and residual resins that were hazardous based on their flashpoints. A total of 22,500 gallons of nonhazardous wastewater was removed for off-site disposal. The resins were transferred from the tanks into 32 55-gallon drums. These drums were transported off site and disposed of as hazardous waste. A total of 830 tons of sludge from the sludge basement was solidified and sent off site for treatment and disposal.

Under Task 3, Earth Tech demolished the concrete foundation above each of the basement areas. Concrete flooring, interior basement walls, and foundation supports were demolished to 2 feet below grade. A total of 1,345 tons of concrete was hauled off site. Additional concrete was used to fill the sludge basement and west basement areas. Concrete slabs lying at grade and having no voids beneath were broken to allow drainage and left in place. Foundry sand discovered beneath the northern and southwestern slabs was used to solidify sludge. A total of 383 tons of excess foundry sand and 82 tons of lead-contaminated soil mixed with broken concrete, bricks, and metal were transported off-site for treatment and disposal.

3.0 SITE ASSESSMENT ACTIVITIES

Site assessment activities included a site reconnaissance and soil sampling. These activities are discussed below.

3.1 SITE RECONNAISSANCE

On 04 Sep 01, U.S. EPA on-scene coordinator Ken Theisen and START personnel visited the Dutch Boy site to identify historical soil boring locations. START had obtained coordinates from the City of Chicago Department of Environment for historical soil boring locations with elevated concentrations of total lead and TCLP lead. Using the coordinates and a GPS, START identified these locations at the site. U.S. EPA and START then selected 16 additional sampling locations that could be used to fill data gaps remaining from previous investigations. The coordinates of these locations were obtained using the GPS, and all the sampling locations selected were plotted on a site map. Figure 2 illustrates the new historical soil sampling locations.

3.2 SOIL SAMPLING ACTIVITIES

On 12 Sep 01, U.S. EPA, START, and Rapid Sampling met at the Dutch Boy site to collect soil samples. START had procured Rapid Sampling to collect surface soil samples using direct-push technology. Each soil boring was advanced to 4 feet bgs using a decontaminated, 4-foot-long macro sampler with a disposable, polyvinyl chloride liner. At each location covered by concrete, a hammer drill and a rod with a pointed bit were used to create a hole for the macro sampler to pass through. In each boring, a sample was collected from 0 to 3 feet bgs to represent surface soil conditions. Eight soil samples labeled "RSB-xx" were collected and analyzed to verify sample analytical results from previous investigations. Eighteen soil samples labeled "DB-xx" were collected and analyzed to fill data gaps remaining from previous investigations. Two duplicate soil samples were collected for quality control purposes. Table 1 summarizes the samples collected at the site.

On 13 Sep 01, U.S. EPA and START met at the site to obtain the GPS coordinates of all the locations sampled on the previous day. During coordinate collection, U.S. EPA noticed some broken concrete in the southwestern portion of the site. Underneath the broken concrete was a black, shiny, metallic material. START collected a grab sample of the material and labeled the sample as "Grab."

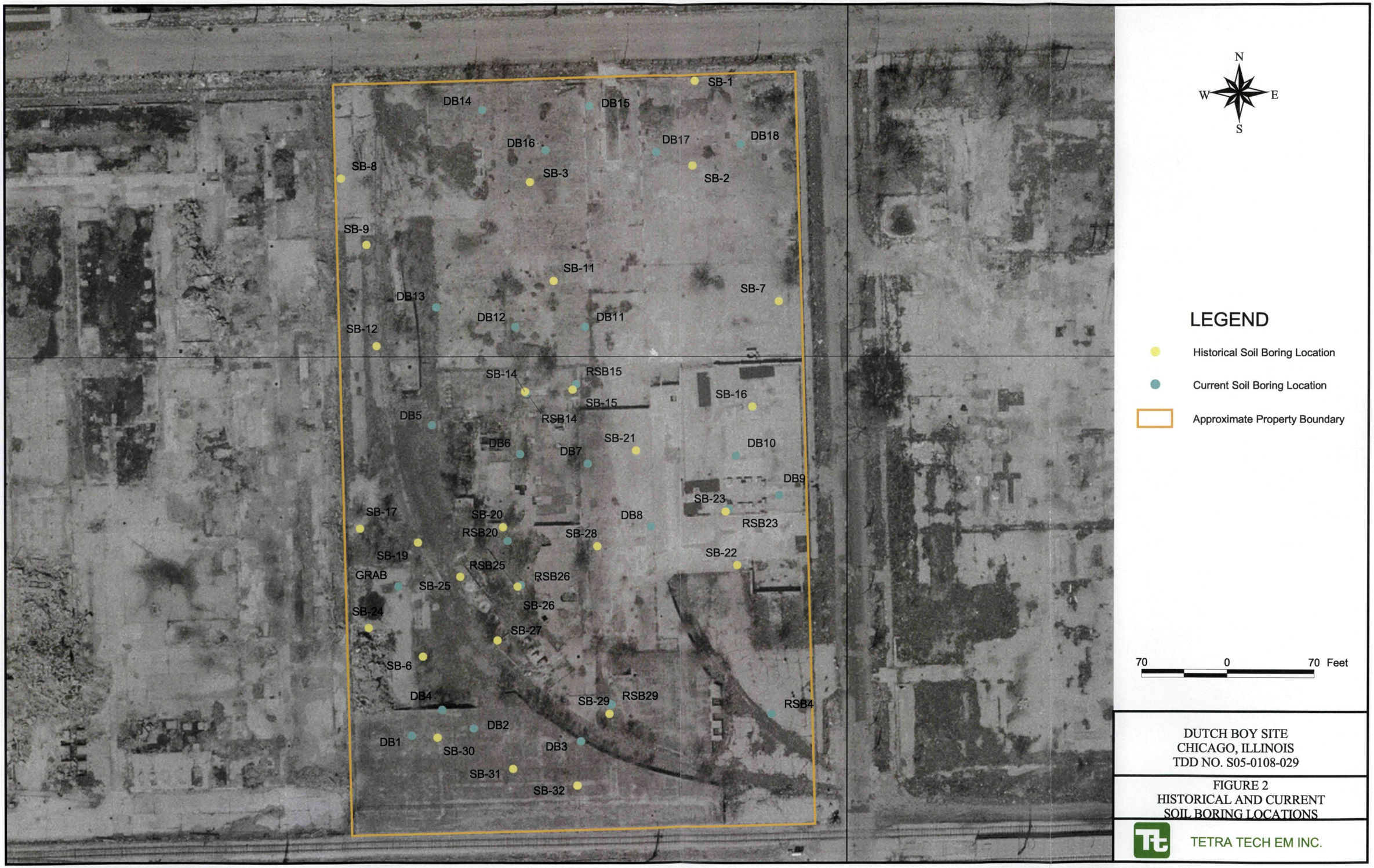

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FIGURE 2
HISTORICAL AND CURRENT
SOIL BORING LOCATIONS

TETRA TECH EM INC.

TABLE 1

SAMPLE SUMMARY
DUTCH BOY SITE
12 AND 13 SEP 01

Sample ID	Date of Collection	Sample Type[a]	Laboratory Analyte
DB-1	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-2	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-3	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-4	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-5	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-6	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-7	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-8	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-9	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-9D	12 Sep 01	Data gap duplicate sample	Total lead and TCLP lead
DB-10	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-11	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-12	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-13	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-14	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-15	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-15D	12 Sep 01	Data gap duplicate sample	Total lead and TCLP lead
DB-16	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-17	12 Sep 01	Data gap sample	Total lead and TCLP lead
DB-18	12 Sep 01	Data gap sample	Total lead and TCLP lead
RSB-4	12 Sep 01	Verification sample	Total lead and TCLP lead
RSB-14	12 Sep 01	Verification sample	Total lead and TCLP lead
RSB-15	12 Sep 01	Verification sample	Total lead and TCLP lead
RSB-20	12 Sep 01	Verification sample	Total lead and TCLP lead
RSB-23	12 Sep 01	Verification sample	Total lead and TCLP lead
RSB-25	12 Sep 01	Verification sample	Total lead and TCLP lead
RSB-26	12 Sep 01	Verification sample	Total lead and TCLP lead
RSB-29	12 Sep 01	Verification sample	Total lead and TCLP lead
Grab	13 Sep 01	Grab sample	Total lead and TCLP lead

Notes:

TCLP = Toxicity characteristic leaching procedure

a Verification samples were collected and analyzed to verify sample analytical results from previous investigations. Data gap samples were collected and analyzed to fill data gaps remaining from previous investigations.

4.0 SAMPLE ANALYTICAL RESULTS

START obtained analytical results for the 8 verification samples, 18 data gap samples, and grab sample collected at the Dutch Boy site. The samples were analyzed by EIS Analytical Services, Inc., in South Bend, Indiana, under analytical TDD No. S05-0109-004. All the samples were analyzed for total lead and TCLP lead. The analytical parameters were chosen based on the site's history and criteria for identification of hazardous waste set forth in 40 CFR Section 261. The analytical results for the samples are summarized in Table 2, and significant results are discussed below. Historical and current total lead and TCLP lead concentrations detected at the site are shown in Figures 3 and 4, respectively. Appendix B contains the validated analytical data package.

Samples RSB-14, RSB-15, RSB-20, RSB-23, RSB-25, RSB-29, DB-7, DB-9, DB-9D, DB-10, and Grab exhibited total lead concentrations above the U.S. EPA soil screening level of 750 mg/kg. Total lead concentrations in these samples ranged from 758 to 69,180 mg/kg.

Samples RSB-15, RSB-20, RSB-23, DB-7, DB-10, DB-18, and Grab exhibited TCLP lead concentrations above the regulatory limit of 5.0 mg/L outlined in 40 CFR Section 261.24 (b) Table 1. TCLP lead concentrations in these samples ranged from 5.62 to 120 mg/L.

Historical and current total lead and TCLP lead concentrations appear to exceed regulatory limits in the south-central portion of the site. The soil sampling locations with lead concentrations exceeding regulatory limits are sporadic; however, they lie mainly in the south-central portion of the site.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
DUTCH BOY SITE
12 AND 13 SEP 01

Laboratory Analyte	Regulatory Limit	Sample ID															
		RSB-4	RSB-14	RSB-15	RSB-20	RSB-23	RSB-25	RSB-26	RSB-29	DB-1	DB-2	DB-3	DB-4	DB-5	DB-6	DB-7	DB-8
Total lead (mg/kg)	750	35	758	**13,690**	**4,735**	775	**3,065**	92	**1,110**	24	38	341	31	33	345	**69,180**	420
TCLP lead (mg/L)	5.0	<0.05	0.71	**11.5**	**24.9**	**8.38**	1.14	0.14	<0.05	<0.05	<0.05	0.40	<0.05	0.19	4.73	**120**	2.47

Laboratory Analyte	Regulatory Limit	Sample ID												
		DB-9	DB-9D	DB-10	DB-11	DB-12	DB-13	DB-14	DB-15	DB-15D	DB-16	DB-17	DB-18	Grab
Total lead (mg/kg)	750	858	**2,060**	**1,110**	33	30	675	177	98	93	598	231	283	**1,545**
TCLP lead (mg/L)	5.0	3.99	1.28	**7.56**	<0.05	<0.05	0.17	0.11	0.39	0.54	0.14	0.47	**7.00**	**5.62**

Notes:

D = Duplicate sample
DB = Data gap sample
mg/kg = Milligram per kilogram
mg/L = Milligram per liter
RSB = Verification sample
TCLP = Toxicity characteristic leaching procedure

Results presented in boldface exceed the regulatory limit set forth in Title 40 *Code of Federal Regulations* Section 261.24 or a soil screening level established by the U.S. Environmental Protection Agency.

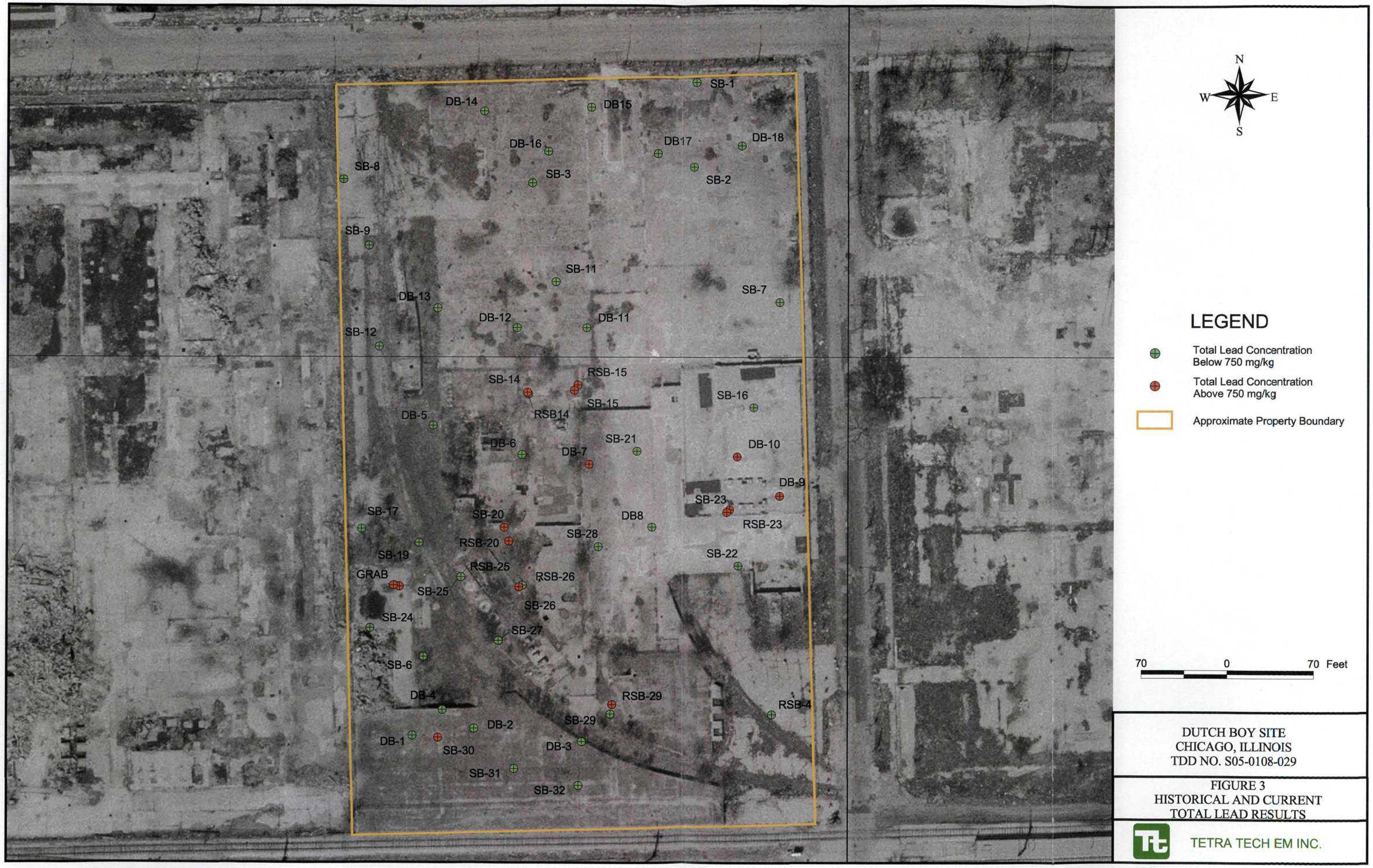

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FIGURE 3
HISTORICAL AND CURRENT
TOTAL LEAD RESULTS

TETRA TECH EM INC.

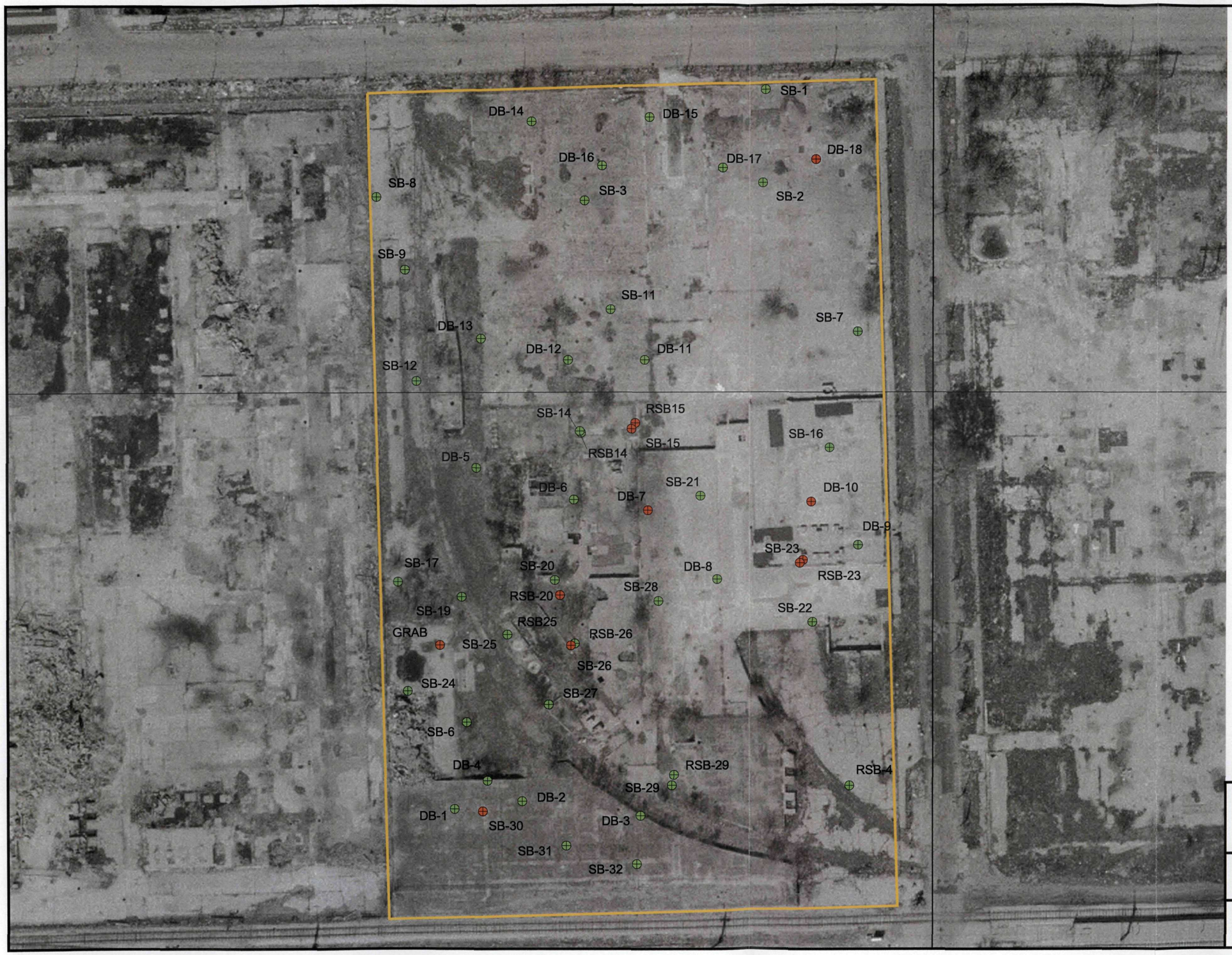

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FIGURE 4
HISTORICAL AND CURRENT
TCLP LEAD RESULTS

TETRA TECH EM INC.

Based on NCP Section 300.415, U.S. EPA may take removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate a release or potential release that poses a threat to the public health or welfare of the United States or the environment. Section 300.415(b)(2) of the NCP lists factors to be considered when determining the appropriateness of a removal action. This section summarizes those factors that are applicable to the Dutch Boy site.

Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances or pollutants or contaminants. TCLP lead concentrations in surface soil at the Dutch Boy site exceed the regulatory limit of 5.0 mg/L. Therefore, hazardous substances are present at the Dutch Boy site.

Lead is a naturally occurring element that can be toxic. According to the Agency for Toxic Substances and Disease Registry, whether lead dust is inhaled or swallowed, the health effects are the same. Lead can affect almost every organ and system in the human body. At high levels, lead can cause weakness in the extremities, memory loss, anemia, and damage to the male reproductive system. The effects of lead at low levels are uncertain. The Occupational Safety and Health Administration (OSHA) limit for lead dust in workplace air is 1.5 micrograms per cubic meter ($\mu g/m^3$)averaged over a 3-month period. The National Institute of Occupational Safety and Health immediately dangerous to life and health concentration for lead is 100 mg/m^3.

Residential and commercial areas border the site on the east, north, and south. The site is surrounded by a fence; however, START observed several holes in the fence during the site assessment. Therefore, pathways exist for direct human exposure to lead-contaminated surface soil.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. During the site assessment, a hazardous substance (lead) was discovered in surface soil. As a result, precipitation and surface water runoff could transport the hazardous substance off site.

6.0 SUMMARY

The Dutch Boy site is located in a residential, commercial, and light industrial area. Analytical results for surface soil samples collected at the site indicate the presence of lead at toxic concentrations. Trespassers and wildlife can access the site and contaminated surface soil through holes in the site fence. Moreover, because lead is present in surface soil, the potential exists for off-site releases of lead via surface water runoff. Therefore, the site meets the criteria for initiating a removal action outlined in NCP Section 300.415(b)(2).

APPENDIX A

PHOTOGRAPHIC LOG

(Five Pages)

Photograph No.: 1 **Orientation:** North
TDD No.: S05-0108-029 **Date:** 12 Sep 01
Location: Dutch Boy site
Subject: Advancing soil boring at sampling location RSB-26

Photograph No.: 2 **Orientation:** South
TDD Number: S05-0108-029 **Date:** 12 Sep 01
Location: Dutch Boy site
Subject: Sample RSB-26

Photograph No.: 3 **Orientation:** West
TDD No.: S05-0108-029 **Date:** 12 Sep 01
Location: Dutch Boy site
Subject: Moving Rapid Sampling's direct-push apparatus

Photograph No.: 4 **Orientation:** East
TDD No.: S05-0108-029 **Date:** 12 Sep 01
Location: Dutch Boy site
Subject: Sampling location RSB-15

Photograph No.: 5
TDD No.: S05-0108-029
Location: Dutch Boy site
Subject: Sampling location DB-8

Orientation: South
Date: 12 Sep 01

Photograph No.: 6
TDD No.: S05-0108-029
Location: Dutch Boy site
Subject: Decontaminating sampling equipment

Orientation: North
Date: 12 Sep 01

Photograph No.: 7
TDD No.: S05-0108-029
Location: Dutch Boy site
Subject: Sampling location DB-12

Orientation: South
Date: 12 Sep 01

Photograph No.: 8
TDD No.: S05-0108-029
Location: Dutch Boy site
Subject: Drilling through concrete surface at sampling location DB-16

Orientation: South
Date: 12 Sep 01

Photograph No.: 9
TDD No.: S05-0108-029
Location: Dutch Boy site
Subject: Dutch Boy site

Orientation: Southwest
Date: 12 Sep 01

Photograph No.: 10
TDD No.: S05-0108-029
Location: Dutch Boy site
Subject: Dutch Boy site

Orientation: East
Date: 12 Sep 01

APPENDIX B

VALIDATED ANALYTICAL DATA PACKAGE

(Three Pages)

MEMORANDUM

Date: 06 Dec 01

To: Chad Gibson, Project Manager, Tetra Tech EM Inc. (Tetra Tech)
Superfund Technical Assessment and Response Team (START)
for Region 5

From: Anne Troup, Chemist, Tetra Tech START for Region 5

Subject: Data Validation for
Dutch Boy Site
Chicago, Cook County, Illinois
Analytical Technical Direction Document (TDD) No. S05-0109-004
Project TDD No. S05-0108-029
Laboratory: EIS Analytical Services, Inc. (EIS), South Bend, Indiana
Work Order No. 010900160
Total Lead and Toxicity Characteristic Leaching Procedure (TCLP) Lead Analysis of 29 Soil Samples

1.0 INTRODUCTION

Tetra Tech START for Region 5 validated total lead and TCLP lead analytical data for 29 soil samples collected on 12 and 13 Sep 01 during a site assessment of the Dutch Boy site in Chicago, Illinois. The samples were analyzed under the above-referenced work order by EIS using U.S. Environmental Protection Agency (U.S. EPA) SW-846 Methods 6010 for total lead analysis and 1311 for TCLP extraction.

The data were validated in general accordance with U.S. EPA's "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" dated Feb 94. Inorganic data validation consisted of a review of the following quality control (QC) parameters: holding times, calibrations, blank results, interference check standard (ICS) results, laboratory control sample (LCS) results, matrix spike/matrix spike duplicate (MS/MSD) results as well as calculations.

Section 2.0 discusses the results of the inorganic data validation, and Section 3.0 presents an overall assessment of the data. The attachment to this memorandum contains EIS's summary of analytical results.

2.0 INORGANIC DATA VALIDATION RESULTS

The results of START's inorganic data validation are summarized below in terms of the QC parameters reviewed.

2.1 HOLDING TIMES

All samples were analyzed within the holding time limit of 6 months.

2.2 CALIBRATIONS

Recoveries during the calibrations were within the QC limits of 90 to 110 percent.

2.3 BLANK RESULTS

Method blanks and continuing calibration blanks were run with each analytical batch. No target analytes were detected in the blanks.

2.4 ICS RESULTS

Results for the ICS solution were within the QC limits of 80 to 120 percent recovery.

2.5 LCS RESULTS

An LCS was analyzed with each analytical batch. The LCS results were all within the QC limits of 80 to 120 percent recovery.

2.6 MS/MSD RESULTS

The MS/MSD results were within the QC limits of 80 to 120 percent recovery established by the laboratory except for MS sample DB-6. Only 78 percent recovery was obtained for this sample. No data qualifications were applied based on this discrepancy because the other MS results were within QC limits. No matrix interference was evident in these samples.

3.0 OVERALL ASSESSMENT OF DATA

Overall, the quality of the sample analytical data generated by EIS is acceptable.

ATTACHMENT

EIS SUMMARY OF ANALYTICAL RESULTS

(Three Sheets)

SAMPLE RESULTS

Client Name: Tetra Tech EM, Inc.
Client Project: Dutch Boy

Report Date: 10/9/01
EIS Order No: 010900160

EIS Lab Number	Client Description	Sample Date	Parameter	Result	Units	RDL	Test Date	Analyst ID	Method
078295	RSB-4	9/12/01	Lead,TCLP	<0.05	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	35	mg/kg(dry)	5	9/21/01	E09	6010
		9/12/01	Moisture(%)	17	%	0.1	10/3/01	E21	160.3
078296	RSB-29	9/12/01	Lead,TCLP	<0.05	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	1110	mg/kg(dry)	5	9/21/01	E09	6010
		9/12/01	Moisture(%)	11	%	0.1	10/3/01	E21	160.3
078297	DB-3	9/12/01	Lead,TCLP	0.40	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	341	mg/kg(dry)	5	9/21/01	E09	6010
		9/12/01	Moisture(%)	18	%	0.1	10/3/01	E21	160.3
078298	DB-4	9/12/01	Lead,TCLP	<0.05	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	31	mg/kg(dry)	5	9/21/01	E09	6010
		9/12/01	Moisture(%)	20	%	0.1	10/3/01	E21	160.3
078299	RSB-26	9/12/01	Lead,TCLP	0.14	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	92	mg/kg(dry)	5	9/21/01	E09	6010
		9/12/01	Moisture(%)	23	%	0.1	10/3/01	E21	160.3
078300	RSB-25	9/12/01	Lead,TCLP	1.14	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	3065	mg/kg(dry)	50	9/21/01	E09	6010
		9/12/01	Moisture(%)	21	%	0.1	10/3/01	E21	160.3
078301	RSB-20	9/12/01	Lead,TCLP	24.9	mg/L	0.5	9/20/01	E09	6010
		9/12/01	Lead,Total	4735	mg/kg(dry)	50	9/21/01	E09	6010
		9/12/01	Moisture(%)	24	%	0.1	10/3/01	E21	160.3
078302	DB-5	9/12/01	Lead,TCLP	0.19	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	33	mg/kg(dry)	5	9/21/01	E09	6010
		9/12/01	Moisture(%)	15	%	0.1	10/3/01	E21	160.3
078303	RSB-14	9/12/01	Lead,TCLP	0.71	mg/L	0.05	9/20/01	E09	6010
		9/12/01	Lead,Total	758	mg/kg(dry)	5	9/21/01	E09	6010
		9/12/01	Moisture(%)	16	%	0.1	10/3/01	E21	160.3
078304	RSB-15	9/12/01	Lead,TCLP	11.5	mg/L	0.25	9/20/01	E09	6010
		9/12/01	Lead,Total	13690	mg/kg(dry)	50	9/24/01	E09	6010
		9/12/01	Moisture(%)	16	%	0.1	10/3/01	E21	160.3
078305	DB-6	9/12/01	Lead,TCLP	4.73	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	345	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	13	%	0.1	10/3/01	E21	160.3

SAMPLE RESULTS

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Client Project: Dutch Boy

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EIS Lab Number	Client Description	Sample Date	Parameter	Result	Units	RDL	Test Date	Analyst ID	Method
078306	DB-7	9/12/01	Lead,TCLP	120	mg/L	0.75	9/24/01	E09	6010
		9/12/01	Lead,Total	69180	mg/kg(dry)	500	9/24/01	E09	6010
		9/12/01	Moisture(%)	15	%	0.1	10/3/01	E21	160.3
078307	DB-9	9/12/01	Lead,TCLP	3.99	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	858	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	18	%	0.1	10/3/01	E21	160.3
078308	DB-9D	9/12/01	Lead,TCLP	1.28	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	2060	mg/kg(dry)	50	9/24/01	E09	6010
		9/12/01	Moisture(%)	18	%	0.1	10/3/01	E21	160.3
078309	RSB-23	9/12/01	Lead,TCLP	8.38	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	775	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	13	%	0.1	10/3/01	E21	160.3
078310	DB-8	9/12/01	Lead,TCLP	2.47	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	420	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	13	%	0.1	10/3/01	E21	160.3
078311	DB-10	9/12/01	Lead,TCLP	7.56	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	1110	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	7.0	%	0.1	10/3/01	E21	160.3
078312	DB-11	9/12/01	Lead,TCLP	<0.05	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	33	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	22	%	0.1	10/3/01	E21	160.3
078313	DB-12	9/12/01	Lead,TCLP	<0.05	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	30	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	19	%	0.1	10/3/01	E21	160.3
078314	DB-13	9/12/01	Lead,TCLP	0.17	mg/L	0.05	9/21/01	E09	6010
		9/12/01	Lead,Total	675	mg/kg(dry)	5	9/24/01	E09	6010
		9/12/01	Moisture(%)	17	%	0.1	10/3/01	E21	160.3
078315	DB-14	9/12/01	Lead,TCLP	0.11	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	177	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	17	%	0.1	10/3/01	E21	160.3
078316	DB-15	9/12/01	Lead,TCLP	0.39	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	98	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	12	%	0.1	10/3/01	E21	160.3

SAMPLE RESULTS

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EIS Lab Number	Client Description	Sample Date	Parameter	Result	Units	RDL	Test Date	Analyst ID	Method
078317	DB-15D	9/12/01	Lead,TCLP	0.54	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	93	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	13	%	0.1	10/3/01	E21	160.3
078318	DB-16	9/12/01	Lead,TCLP	0.14	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	598	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	11	%	0.1	10/3/01	E21	160.3
078319	DB-17	9/12/01	Lead,TCLP	0.47	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	231	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	17	%	0.1	10/3/01	E21	160.3
078320	DB-18	9/12/01	Lead,TCLP	7.00	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	283	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	12	%	0.1	10/3/01	E21	160.3
078321	DB-1	9/12/01	Lead,TCLP	<0.05	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	24	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	4.2	%	0.1	10/3/01	E21	160.3
078322	DB-2	9/12/01	Lead,TCLP	<0.05	mg/L	0.05	9/24/01	E09	6010
		9/12/01	Lead,Total	38	mg/kg(dry)	5	10/1/01	E09	6010
		9/12/01	Moisture(%)	4.4	%	0.1	10/3/01	E21	160.3
078323	GRAB	9/13/01	Lead,TCLP	5.62	mg/L	0.05	9/24/01	E09	6010
		9/13/01	Lead,Total	1545	mg/kg(dry)	25	10/1/01	E09	6010
		9/13/01	Moisture(%)	12	%	0.1	10/3/01	E21	160.3